

Poisoning by *Euphorbia marginata*.

In addition to the notes already published on this plant in the GAZETTE, page 225, 1887, I can now add the following: It is annually becoming more abundant, and is now a common weed about the streets of Mt. Carmel. For several years I had been seeing, as I thought, an unusually large number of cases of "ivy poisoning."

It so happened that in handling some fresh plants of this species, I accidentally rubbed a considerable quantity of the milky juice on my neck and under the collar. This produced a decided burning sensation during the afternoon, and the next morning I found the skin, as far as the juice had gone, red and thickly studded with a pimply eruption, which subsided in the course of several days by the use of a lotion of sugar of lead and laudanum. I then suspected that here was an explanation of my frequent cases of ivy poisoning, and further observation has proved this to be true.

Its gaudy appearance makes this plant very attractive; children in their plays, and others in collecting bouquets, pluck and handle it frequently. In many persons the juice produces a severe irritation of the skin, resulting in a thick fine eruption of a purplish-red color, presenting very nearly the same appearance as a case of poisoning by *Rhus Toxicodendron*, except that the eruption is a little finer in the former. I have seen a few cases, in children with unusually delicate skin, where the epidermis was raised, and the whole surface, as far as the juice had gone, was blistered. There is usually much complaint of a burning sensation in the parts affected.

Mt. Carmel, Ill.

JACOB SCHNECK.

NOTES AND NEWS

GERMANY has now nine schools of forestry.

MR. F. W. ANDERSON has accepted the position of assistant editor of the *American Agriculturist*.

MR. J. G. BAKER, in *Journal of Botany* (Sept.), describes 18 new species of Tonquin ferns, collected by M. B. Balansa.

THE SHOOTS of a Bamboo in the Peradenya Botanic Garden, Ceylon, are reported to have grown at the rate of 13 inches in 24 hours in April.

The *Orchard and Garden* for August contains a portrait and biographical sketch of Professor F. Lamson-Scribner, Director of the Agricultural Experiment Station of Tennessee.

H. M. DEWEY, a graduate of Michigan Agricultural College, and for two years one of Dr. Beal's assistants, has been appointed one of the assistants in the Botanical Division of the Agricultural Department.

MR. CARL W. HARTMANN, of Sweden, is the botanist of the Lumholtz Mexican Exploring Expedition, which started from Arizona on August 30th, and hopes to return in the autumn of 1892.—*Garden and Forest*.

EUCALYPTUS seems to be sustaining its reputation as a "fever-tree." It is said to have made the Pontine marshes of Italy habitable, and it is now proposed to cultivate it on a large scale in the malarious parts of tropical Africa.

THE PLANTS recently illustrated in *Garden and Forest* are *Prunus Allegheniensis* Porter (Sept. 3), a monstrous form of *Kalmia latifolia* L. (Sept. 17), *Cornus Baileyi* Coulter & Evans (Sept. 24), and *Rosa Watsoniana* Crepin (Oct. 1).

PROFESSOR BASTIN, of Chicago, author of a well known botanical textbook, is much interested, according to the *American Florist*, in a project to make a wild garden of native plants a feature of the horticultural display at the World's Columbian Exposition.

THE THIRD ISSUE (Nos. 3-4) of the Bulletin from the laboratories of natural history of the Univ. of Iowa continues the enumeration of the saprophytic fungi of Iowa by Prof. T. H. McBride, and has a short account of the common species of edible fungi.

MR. T. V. MUNSON, a well known authority on grape vines, has given a conspectus of the American species of *Vitis* in the *Garden and Forest* (Oct. 1), with remarks upon their horticultural value. He enumerates 25 species, the distinctions between many of them having been discovered by cultivation.

THE TARIFF BILL, just passed Congress, contains a provision of much interest to every college teacher. It permits universities, colleges, etc., not only to import books for the institution free of duty, but also for any teacher connected with the institution. All works in languages other than English have been placed upon the free list.

WILLIAM RUSSELL, studying in the botanical laboratory of the Sorbonne, concludes that the tannin in Papilionaceæ behaves as a material for excretion, which localizes itself at first in special cells analogous to the latex vessels. These cells appear in the vascular bundles before the differentiation into wood and bast.—Cf. *Rev. gén. de botanique*, ii. 344.

EMANATING from the same laboratory and appearing in the same journal, are a series of papers by Aug. Daguillon on the leaves of Conifers. The writer shows that in the Abietineæ there are always what he calls "primordial" leaves, which are intermediate between the cotyledons and the permanent leaves. The transition from one sort to the other may be abrupt as in the genus *Pinus* or gradual as in *Abies*. The passage into the permanent form is characterized by a modification in the phyllotaxy, a change in the character of the epidermis, the development of one or more layers of hypodermal sclerenchyma (except in *Cedrus*, in which they appear even in cotyledons) and by alterations in the tissues of the vascular bundle and the parenchyma.

THE FUNGUS DISEASES of spinach observed in New Jersey have been described and well illustrated in bulletin No. 70 of the N. J. Exper. Station, by Dr. B. D. Halsted. Mildew, anthracnose, leaf blight, white smut and black mold are mentioned. The anthracnose (*Colletotrichum spinaceæ* Ell. & Hals.) and white smut (*Entyloma Ellisii* Hals.) are newly discovered.

M. A. COGNIAUX has described a new southwestern genus of Cucurbitaceæ. *Brandegia* commemorates Mr. T. S. Brandeggee who is doing much service in elucidating the botany of Lower California. The genus is near *Cyclanthera*, and contains two species, *B. Bigelovii*, which had already been doubtfully referred to several genera, and *B. monosperma*, the *Cyclanthera monosperma* of Brandeggee. The distributed description is an extract from Proc. Calif. Acad. Ser. 2, iii, pp. 58-60.

RESEARCHES relating to the smut of cereals have been for some time and are still being carried on by Professor Kellerman and Mr. Swingle, of the Kansas Agricultural College and Experiment Station. A preliminary report on smut in oats (14 pp. and 4 pl.) was printed in Oct., 1889, and a more extended report on loose smut of cereals in Jan., 1890 (76 pp. and 9 pl.). These contain much excellent scientific matter. A third report will be issued probably before this number of the GAZETTE appears, and still another is partly ready.

IN THE REPORT of the Department of Botany of the British Museum for 1889, by Professor Carruthers, are the following items of general interest: During the year 51,652 specimens have been mounted, chiefly European plants, although containing collections from Singapore, China, Japan, Borneo, Atlas Mountains, Scotra, Madagascar, South Africa, Australia, Canada, Mexico, Dominica, and Republic of Columbia. One of the notable additions to the Herbarium is the acquisition by purchase of the microscopic preparations of Professor de Bary in connection with his investigations into plant anatomy and the parasitic diseases of plants. The total number of these slides is 4,429.

L. KNY thinks that much of the confusion as to the character of the pith rays of trees is due to the fact that the two elements have not been before distinguished. This he does in a communication to the German Botanical Society (*Berichte*, viii. 176). These two elements he designates as the "palisade" and the "merenchyma." The two are distinct (1) in form, the first being usually longer longitudinally than radially, while the latter are much elongated radially; (2) in the pitting of the wall in the neighborhood of the vessel, the palisade cells having wide pits while they are wanting entirely in the merenchyma; and (3) in the presence of small intercellular spaces between the cells of the merenchyma.

DR. B. D. HALSTED has collected an interesting set of facts as to the botanical work at experiment stations, and gives some of them in *Garden and Forest* (Sept. 24). There are now 29 botanists employed at these stations, and to the question "What botanical problems appear to you to be of most immediate importance in your state?" 16 reply "fungous diseases of cultivated plants." The study of grasses and forage plants is considered next in importance; next, the subject of weeds; then forest and forest-trees; and then plants for barren lands. Very few are working in the subject of fertilization; two are considering the relations of climate to vegetation; two are testing seeds; and at least one botanist considers bacteria among the more important subjects for study.

G. KRABBE takes issue with the long-accepted theory of Nägeli as to the mode of solution of starch grains by diastase, according to which the diastase was supposed to penetrate the grain and leach out, as it were, the molecules of starch as it converted them into glucose. The investigations of Krabbe show that diastase is probably a colloidal body, and unlikely to be able to penetrate starch grains, since it is unable to pass through parchment paper, clay cups or the cell walls of fir wood. The diastase in the form in which it can transform starch is not able to travel from one cell to another, and it is probably formed in the place in which it is to be used. In general, the solution of a starch grain is essentially like that of a crystal.—Cf. *Pringsheim's Jahrbücher*, xxi. 520.

NEARLY two and a half years ago the trunk of a Yucca, probably *Y. elata*, was received at Kew from Dr. Pringle as a specimen for the Museum of Woods. It measured 14 feet in height by 1 foot in diameter near the base. There was not a vestige of a root upon it, and the top had been sawn off. It was at once placed in the museum, where, of course, the conditions are almost as dry as an oven. A week or two ago two shoots were seen growing out from the top of the trunk, one composed of leaves, the other of flowers. On examination the whole of the trunk proved to be full of sap, and as succulent as if it had only just been dug up from the ground. It was, therefore, removed to the Temperate-house, where it may now be seen in flower.—W. Watson in *Gardener's Chronicle*.

THE INTERESTING method of research on the water conducting tissue devised by Bokorny (iron sulphate solution) has already been described

in this journal (xiv. p. 272). A further contribution to the same subject by Bokorny will be found in Pringsheim's *Jahrbücher* xxi. 469. Here the author discusses the relative conducting capacity of different tissues, the variation in this capacity induced by the action of various substances, the relation of the walls of vessels to conduction and the use of coloring matters for studying the transpiration stream.

THE BULLETIN of the Torrey Botanical Club for August contains "a descriptive list of the genus *Heuchera*," by Wm. E. Wheelock, in which 21 species are enumerated, *H. Nova-Mexicana* being a new one; a biographical sketch of Dr. Geo. Thurber, by H. H. Rusby; another installment of Dr. Rusby's South American plants, containing descriptions of 5 new species and completing the enumeration through *Samydaceæ*; a new *Cheilanthes* from Lower California, by D. C. Eaton, named *C. Brandegei*; and a new fern for N. Am., *Asplenium fontanum* Bernh. (*A. Halleri* R. Br.), reported by Professor T. C. Porter from both Pennsylvania and Ohio.

DR. ALFRED FISCHER has in the last part of Pringsheim's *Jahrbücher* a long paper on certain points in the physiology of woody plants. We translate a part of his summary of results as being of unusual interest:

In summer there may be obtained in the vessels of fifty per cent. of the deciduous trees examined and in the tracheides of the observed *Coniferae* a very strong glucose reaction. The other fifty per cent. contain only a little glucose. *Juglans* and *Fraxinus* contain none. The glucose is generally only in the vessels, none or a very little being found in the wood fibers. Undershrubs and herbs contain no glucose in the vessels of their stems, roots, petioles, or veins. It does not occur in the two latter places even in the deciduous trees. In winter the amount of glucose in the glucose-poor woods remains small; in the glucose-rich woods there is a greater or less diminution in the amount present. In spring a great increase in the amount of glucose in the vessels takes place during the time of blooming, which is followed by a further increase when at the beginning of May the reserve starch is dissolved; at this time the quantity reaches its maximum. There is no further increase of the glucose during the summer, but a slight decrease toward the end of the time of solution of the reserve food.

The starch in the body of a tree undergoes numerous changes, mostly during the period of vegetative rest. Eight phases may be noted: a starch maximum in late autumn, followed by a solution of starch in November; a starch minimum during December, January and February; a regeneration of starch in early spring, resulting in a starch maximum in spring; a solution of starch about the beginning of May, followed by a minimum towards the end of May; and finally, an accumulation of starch through the summer. In the hard wood trees the reserve starch of the wood and pith remains unchanged throughout the winter, only the starch in the bark being dissolved and appearing again in spring. In the soft wood trees, including the *Conifers*, the alterations in winter and spring affect all the starch in the pith, wood and bark. At the time of the winter minimum branches, pieces of bark and even microscopic sections will form starch in the cells in a short time, the more and the quicker the higher the temperature. Even at 5° C. starch will be formed in forty-eight hours. The material from which it is formed is glucose, which is already present in the cells. This starch regeneration in spring, as well as the solution of it in the autumn, is not entirely dependent on temperature, but is determined also by an inherited periodicity of the protoplasm.